

**IN THE CLAIMS**

The claims pending in the application are reproduced below in accordance with 37 C.F.R. § 1.121:

1. (currently amended) A cooling apparatus for fuel cell components comprising:
  - a base plate having an upper section and a lower section;
  - a plurality of upper ribs coupled to said upper section and a plurality of lower ribs coupled to said lower section, said plurality of upper ribs defining upper channels and said lower ribs defining lower channels parallel to said upper channels, said upper channels and said lower channels being fluidically coupled by at least one cavity disposed in said base plate configured to allow a flow of a fluid from the upper channels through the lower channels, wherein the cooling apparatus is not configured to be a fuel cell electrode.
2. (original) The cooling apparatus of claim 1, wherein said fuel cell components are selected from the group consisting of cathodes, anodes and electrolytes.
3. (previously presented) The cooling apparatus of claim 1, wherein a plurality of concavities are disposed on a surface portion of said upper channels and disposed on a surface portion of said lower channels.
4. (original) The cooling apparatus of claim 3, wherein said concavities are selected from the group consisting of depressions, indentations, dimples and pits.

5. (original) The cooling apparatus of claim 1, wherein said fluid is selected from the group consisting of gaseous fuels and oxidants.

6. (previously presented) The cooling apparatus of claim 1, wherein said cooling apparatus comprises one of a thin-formed metal, stainless steel, cobaltite, ceramic,  $\text{LaCrO}_3$ ,  $\text{CoCrO}_4$ , an alloy comprising nickel and chromium, an alloy comprising nickel and cobalt, or combinations thereof.

7. (currently amended) A fuel cell assembly comprising:  
a fuel cell electrode and an electrolyte;  
a cooling apparatus coupled to said fuel cell and not configured to be the fuel cell electrode, said cooling apparatus comprising:  
a base plate having an upper section and a lower section;  
a plurality of upper ribs disposed over said upper section and a plurality of lower ribs disposed over said lower section, said plurality of upper ribs defining upper channels and said plurality of lower ribs defining a lower channels parallel to said upper channels, said upper channels and said lower channels being fluidically coupled by at least one cavity disposed in said base plate configured to allow a flow of a fluid from the upper channels through the lower channels.

8. (previously presented) The fuel cell assembly of claim 7, wherein said fuel cell assembly is selected from the group consisting of solid oxide fuel cells, solid polymer fuel cells, molten carbonate fuel cells, phosphoric acid fuel cells, alkaline fuel cells, direct methanol fuel cells, regenerative fuel cells, and protonic ceramic fuel cells.

9. (previously presented) The fuel cell assembly of claim 7, wherein said fuel cell electrode is selected from the group consisting of a cathode and an anode.

10. (previously presented) The fuel cell assembly of claim 7, wherein a plurality of concavities are disposed on a surface portion of said upper channels and disposed on a surface portion of said lower channels.

11. (original) The fuel cell assembly of claim 10, wherein said concavities are selected from the group consisting of depressions, indentations, dimples and pits.

12. (previously presented) The fuel cell assembly of claim 7, wherein a plurality of concavities are disposed on a surface portion of said fuel cell electrode.

13. (original) The fuel cell assembly of claim 7, wherein said fluid is selected from the group consisting of gaseous fuels and oxidants.

14. (previously presented) The fuel cell assembly of claim 7, wherein said cooling apparatus comprises one of a thin-formed metal, stainless steel, cobaltite, ceramic,  $\text{LaCrO}_3$ ,  $\text{CoCrO}_4$ , an alloy comprising nickel and chromium, an alloy comprising nickel and cobalt, or combinations thereof.